C A M B O D I A

HELEN KELLER INTERNATIONAL

Vol. 1, Issue 1
October 1999

NUTRITION BULLETIN

Iron Deficiency in Cambodia – A threat to the development of young Cambodian children and the country's future

Cambodia is in a period of transition leaving behind a long history of conflict and struggle and is in the process of building a strong and viable society.

Cambodia has a rich culture and great economic potential; however, it still has a high underfive mortality (115 deaths/1,000 live births)[1], high population growth (2.5%)[2] and low GNP (US$300)[3]. To build a strong future, Cambodia cannot neglect the development of its children.

Several recent studies show that anemia among young children in rural Cambodia is a serious public health problem. According to a study conducted by Helen Keller International (HKI) in five rural provinces, almost 9 out of 10 children less than 24 months of age are anemic (hemoglobin less than 11 g/dl). This is alarming because research confirms that IDA (iron deficiency anemia) during childhood causes long-lasting impairments in cognitive development, ultimately resulting in lower school and work performance. Children with IDA are also at greater risk of becoming ill and may grow more slowly.[4]

In 1993, Cambodia joined other countries to commit to achieving the 1990 World Summit for Children goals to reduce IDA among women and children by one-third by the year 2000. In order to reach this goal, awareness of the magnitude of the problem must be raised among policy makers, program managers and communities. Simultaneously, multifaceted programs should be developed to tackle IDA among women, children and adolescents. Programs to control IDA, such as supplementation, food fortification, and increased consumption of iron-rich foods, are successfully implemented in other countries and have been shown to be highly cost-effective.[5] To prevent the loss of another future generation, infants and young children must be given the opportunity to grow and develop into healthy adults who will be able to contribute to Cambodia's future development.

IDA among children in rural Cambodia

The lack of programs to address childhood IDA is largely because data on the magnitude of IDA is not available in many countries and because decision-makers are not aware of the serious consequences of IDA during childhood. The HKI sur-

[1] National Health Survey 1998, National Institute of Public Health, Ministry of Health, Cambodia.
[2] General Population Census of Cambodia 1998, Final Census Results, National Institute of Statistics, MOP, Cambodia.
[3] IBRD. World Development Report 1998/99.
[4] Gillespie S. *Major Issues in the Control of Iron Deficiency*. Micronutrient Initiative/UNICEF, 1998.
[5] Murray C, Lopez A (eds). Global Burden of Disease and Injury (Vol. 1), 1996. Harvard University Press, Cambridge, MA, USA.

Common Facts about Iron Deficiency Anemia:

- Anemia is the most common nutritional deficiency in the world: Iron deficiency and its anemia affects more than 3.5 billion people.
- Although there are other causes, iron deficiency is the leading cause of anemia.
- Iron deficiency anemia has few signs and symptoms and therefore often goes unnoticed – by families of those affected, by health care professionals and by policy makers.
- Iron in the diet comes in two forms: *Heme iron* is found in animal foods and is well absorbed by the body. *Non heme iron* is found in plant foods and is less well absorbed. Eating animal foods and foods rich in vitamin C and avoiding foods that inhibit iron absorption, such as tea, can improve the iron absorption from plant foods.
- There are several stages of iron deficiency – what public health professionals most commonly measure, anemia, is the final stage. Some experts suggest that the prevalence of iron deficiency is almost twice the prevalence of IDA.
- The costs of iron or micronutrient supplementation programs are minimal and the benefits are enormous.
- Children often suffer from deficiencies of multiple micronutrients at the same time because their diets are simultaneously insufficient in many nutrients and calories. Vitamin A deficiency has also been shown to precipitate anemia.

Major consequences of IDA:

IDA can slow child physical development and motor skills.

IDA during childhood reduces IQ similar to iodine deficiency.

IDA has large economic costs:

– Current and future productivity is decreased.

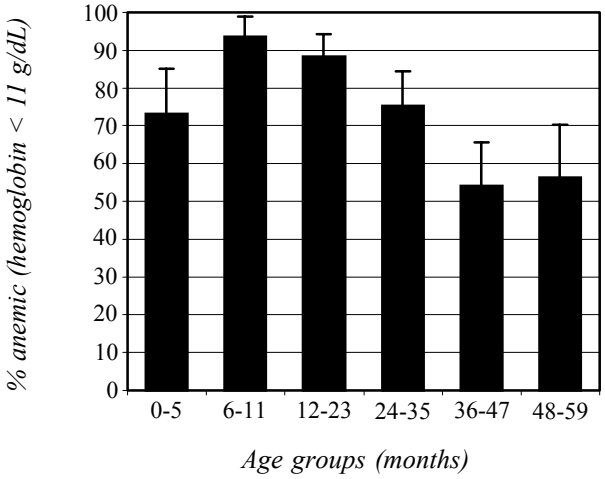
– Education investments are not maximized.

– The burden on the health care system is increased.

Severe IDA, particularly during pregnancy, can lead to mortality.

Source: Gillespie SR. *Major Issues in the control of iron deficiency.* The Micronutrient Initiative, 1998.

Figure 1. Prevalence of childhood anemia in Cambodia (n=344)



(continued from p1)

vey, conducted in five provinces of rural Cambodia in May 1999, found that 74% of children under five years of age suffered from anemia (hemoglobin less than 11.0 g/dl). Although the survey was not nationally representative, it suggests that anemia is a serious problem in Cambodia. These rates of anemia in children are considerably higher than even the high rates found in recent surveys by HKI in other countries in Asia.

In addition to highlighting the high prevalence of childhood IDA in rural Cambodia, the HKI study reveals several other important findings. As shown in Figure 1, IDA was already extremely high among children less than 6 months of age (73%). The prevalence of IDA rose even higher among children 6-11 months of age when more than 9 of 10 children were anemic. Rates were only slightly lower for children 12-35 months of age.

The high rates of anemia most likely reflect an inadequate consumption of iron-rich foods. The HKI study collected information on the dietary intake of children, as well as infant feeding and breastfeeding practices, revealing a number of important statistics. First, less than 20% of children 0-6 months of age in the study areas were being exclusively breastfed. Breastmilk is the most important source of iron for children less than 6 months of age. Second, the consumption of animal foods, such as fish, meat, and eggs, was also low among Cambodian children, particularly among children 6-23 months of age, among whom anemia rates were highest, and growth and development is greatest. Animal foods are crucial sources of iron and other micronutrients. When asked why they were not feeding micronutrient-rich foods to their children, the majority of mothers reported

that they could not afford to purchase these foods. In addition, mothers believed that giving certain foods to their children may cause illness or was not appropriate for younger children.

The HKI study reveals that childhood IDA is a serious problem in parts of rural Cambodia. Although food fortification and increased consumption of animal and plant foods high in iron and other micronutrients are the ultimate long-term solutions, immediate action is required to prevent the potentially irreversible slowed cognitive and physical development that is occurring among young children in rural Cambodia. In the immediate future, iron supplementation programs for infants and young children are needed.

Because the diets of mothers and children in these study areas are also low in other important micronutrients, supplementation with multi-micronutrients should be encouraged. More than 70% of pregnant women in the study areas had IDA, thus, mothers also need to receive multi-micronutrient supplements – to protect their own health and their children's as well. Iron and multi-micronutrient supplementation programs are not expensive and the immediate and future benefits of implementing these programs will be enormous.

Recommendations

- A **national survey** to assess anemia prevalence and to explore the etiology and key risk factors for childhood and maternal anemia in Cambodia is warranted.
- **Provision of iron or multi-micronutrient supplements to children and women** should be undertaken **to prevent IDA** in children and women. Supplements might be delivered through ongoing NGO programs or the health care system.
- Programs that **increase the production and availability of micronutrient-rich foods**, both animal and plants, should be expanded.
- Programs to **improve breast feeding practices and to improve the quality and timely introduction of appropriate foods for infants** are also needed.

History of HKI in Cambodia

In the early 1990s, HKI provided technical consultations to investigate the magnitude of vitamin A deficiency in Cambodia and provided technical assistance to international and local non governmental organizations (NGOs) to integrate vitamin A interventions into their ongoing programs. In 1993 HKI established an office in Phnom Penh. In 1995, the focus of the program was expanded to promoting sustainable nutrition interventions to improve micronutrient status and institutionalizing primary eye care. Specifically, in the area of nutrition, HKI has been involved in:

- Piloting vitamin A capsule coverage programs and recommending strategies for the national program
- Promoting food-based approaches to alleviating vitamin A deficiency
- Developing communications strategies for promoting vitamin A rich foods
- Supporting national efforts for the control of iodine deficiency disorders

HKI's work in Cambodia has been supported by the US Agency for International for International Development (USAID), the United Nation's Children Fund (UNICEF), the World Health Organization (WHO) and private donors.

History of RCG/HKI collaboration

Based on preliminary evidence from a hospital-based survey, HKI and the MOH conducted a vitamin A survey in 5 regions in 1993. The findings of the survey suggested that clinical vitamin A deficiency was a serious public health problem among preschool children in Cambodia. Subsequently, the collaboration between the RCG/MOH and HKI has included:

- Creating awareness of the link between VAD and child survival
- The start-up of a program to distribute VACs bi-annually, which was subsequently linked with the National Immunization Day campaigns
- The establishment of a national vitamin A working group consisting of members from the MOH, UNICEF, WHO and HKI
- Developing a National Food and Nutrition Policy
- Developing a National Vitamin A Policy

CAMBODIA

Helen Keller International
Nutrition Bulletin

For information and correspondence, contact:

Helen Keller International, Cambodia
P.O. Box 168
Phnom Penh
Kingdom of Cambodia

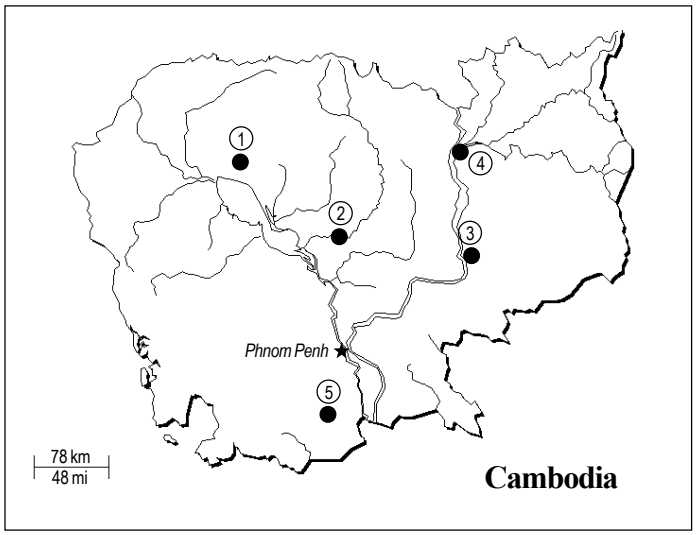
Ms. Dora Panagides, Country Director

Telephone: 855-23-210851
Fax: 855-23-210852
E-mail: hki@bigpond.com.kh

Helen Keller International, Regional Office
P.O. Box 4338
Jakarta Pusat
Indonesia

Dr. Martin W. Bloem, Regional Director

Telephone: 62-21-5263872
Fax: 62-21-5250529
E-mail: mwbloem@compuserve.com



HKI survey areas:
1. Siem Reap
2. Kampong Thom
3. Kratie
4. Steung Treng
5. Takeo

Projects carried out by HKI-Cambodia in collaboration with the Ministry of Health, Royal Cambodian Government (MOH/RCG), the Adventist Development and Relief Agency (ADRA), Chamran Cheat Khmer (CCK), Partners For Development (PFD) and Southeast Asian Outreach (SAO) are funded by the United States Agency for International Development (USAID).

This publication was made possible through support by the USAID/Cambodia Mission under the terms of Award No. 442-G-00-95-00515-00. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the US Agency for International Development.

HELEN KELLER
INTERNATIONAL
CAMBODIA